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Discussions involving the system of generalized currency floating as this relates to the less developed countries (LDC's) have two aspects, namely: (1) the effects on LDC economies of the adoption of more flexible exchange rates by industrialized countries; and (2) the implications of exchange rate flexibility in LDC's themselves.[1] This paper deals primarily with the second issue. It attempts to evaluate, no doubt in a limited manner, the exchange experience of the Philippines during the period of generalized floating of major currencies.

Section 1 provides a brief historical perspective on the 1970 exchange rate reform. Section 2 describes and analyzes the post-1970 exchange rate system, highlighting some of the country's structural characteristics which can help explain its choice of exchange rate regime. Changes in the nominal peso-dollar exchange rate are examined, and speculative pressures during the period of greater exchange rate flexibility are compared to those during the earlier period of adjustable par values. Section 3 introduces the framework for analyzing exchange rate changes in a world of floating rates. Quarterly nominal and real effective exchange rates are calculated

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and discussed, and the contribution of exogeneous currency realingments on effective exchange rate movements is assessed. Furthermore, the variability of monthly effective exchange rates during 1973-1981 is compared to that in 1964-1972. Section 4 studies exchange rate changes in the light of official intervention behavior in the foreign exchange market. Alternative hypotheses about such behavior are formulated and tested. Finally, the major findings of the study are summarized in Section 5.

The Philippines adopted a flexible exchange rate system in early 1970 and has kept it in place since then. In many respects, this system has assisted the country in weathering the external shocks which began with the oil crisis in 1973-74 without the exchange upheavals reminiscent of the 1950's and 1960's. While external balance is yet to be achieved, the post-1970 exchange rate regime, which is more precisely characterized by limited rather than full flexibility, has probably prevented more fundamental disequilibrium from developing, making abrupt and disruptive exchange rate adjustments less of a possibility. The analysis of official intervention behavior in the Philippine foreign exchange market demonstrates the importance of the current account in the exchange rate adjustments undertaken by the monetary authorities, as well as the latter's commitment to the peso-U.S. dollar exchange rate. However, the rate of response to current account developments is found to be rather weak. Furthermore, because major currencies are floating, pre-occupation with the nominal exchange rate has resulted in effective exchange rate changes which are not in the direction suggested by the underlying balance of payments developments in many instances.

1. The 1970 Exchange Rate Reform

The Philippines already had a flexible exchange rate system even before the onset of generalized currency floating in early 1973. Confronted by a foreign exchange crisis that developed in the late 1960's, the government allowed the Philippine peso to float in the foreign exchange market on February 21, 1970.

It is not clear, however, whether the monetary authorities' longer term objective was, in fact, to shift to a flexible exchange rate regime. In January 1962, for example, the peso was allowed to float, only to be fixed six months later.[2] Similarly, in the 1970 floating episode, the exchange rate appears to have been stabilized by October of that year. It seems, therefore, that the principal motivation for floating at the time of its adoption was to determine what the new peso-dollar exchange rate should be rather than to move to a flexible exchange rate system. Eventually, the exchange rate would have been fixed, as in the 1960's, were it not for the events that subsequently characterized the international monetary scene.

These events may have provided a "disguised blessing" as far as the Philippines is concerned, in the sense that exchange rate flexibility probably enabled the country to avoid the exchange upheavals that occurred in the 1950's and late 1960's. Based on the Philippines' exchange rate history, an exchange crisis of the proportion similar to that of the 1950's and 1960's could have easily developed in the 1970's, considering the rapid increases in oil prices, the sharp and extended deterioration in the terms of trade following these price increases,[3] and recession in the industrialized countries. It will not

be too difficult to see what the situation would have been if the government were committed to a fixed exchange rate.

The country's exchange experience during the post-independence period up to 1970 is well documented in Baldwin (1975). Essentially, what one can observe is a cycle consisting of a period of growing external imbalances, followed by the imposition of various forms of trade and exchange controls, and finally, a delayed and, therefore, large devaluation when authorities could no longer defend the existing exchange rate. Obviously, the adjustment process that such a devaluation required was costly and painful. Had changes in the exchange rate been undertaken more promptly, before relative price distortions could grow and become embedded in the economic system, adjustments would have been far less disruptive. But the problem was precisely the difficulty of making timely exchange rate adjustments under the par value system even when such changes were clearly called for. Accordingly, the past two devaluation episodes took place under a "crisis atmosphere" (Krueger 1975, p. 50) and had been traumatic experiences, both politically and economically.

Under the fixed exchange rate regime, there was a great tendency to consider the exchange rate as an objective rather than as an instrument of policy. Maintaining the existing exchange rate was a matter of national pride and prestige, and changes in the rate, or even prospects of such changes, were critical political issues. These attitudes have perhaps persisted under the more recent system of exchange rate flexibility, but to a lesser extent. Because exchange rates are "floating," the public have increasingly considered changes in the exchange rate as a normal economic

phenomenon. And because these changes have been made gradually, adjustments have had less disruptive consequences. Furthermore, policymakers have probably become more confident of the use of the exchange rate as an instrument of development policy; reliance on trade restrictions has been less in the 1970's despite substantial trade and current account deficits after 1973.[4]

These do not imply, however, that the mere adoption of flexible exchange rates in the Philippines has solved for it all problems of adjustment. All that is indicated is that exchange flexibility "can cope with much more serious tensions and disturbances than the previous system of fixed exchanges" (Haberler 1974, p. 331). Whether or not a flexible exchange rate regime is able to provide a means by which a viable exchange rate can be maintained still depends on the actual conduct of exchange rate policy. Accordingly, the remainder of this paper looks into how exchange rate policy has been pursued in the country since 1970 with emphasis on the period of generalized currency floating, 1973-1981.

2. The Post-1970 Exchange Rate Regime

The Philippine peso has been traditionally tied to the U.S. dollar, and it has continued to be so up to the present time. Since the exchange rate reform of 1970, the spot-peso-dollar exchange rate has been determined daily on the basis of interbank trading in the foreign exchange market.[5] Until April 1972, the daily interbank spot peso-dollar exchange rate, or the "guiding rate," was based on the buying and selling rates of the last transaction in the foreign exchange market. Thereafter, the rate has been

established on the basis of the weighted average of exchange rates for all sales made in the preceding day, the weights being the value of trading at each exchange rate. Exchange rates for other currencies are based on the spot buying and selling rates in New York of these currencies (in terms of U.S. dollars) at the close of the day prior to the actual purchase in Manila and on the Central Bank's current buying and selling rates for U.S. dollars. There is no domestic forward exchange market, but forward cover is made available by the Central Bank for transactions involving swap arrangements.

While it is officially maintained that "all exchange transactions take place in a free market,"[6] the Central Bank has exercised direct control over movements in the peso-dollar exchange rate through the purchase or sale of foreign exchange: "Generally, the Central Bank (or an agent bank acting in its behalf) stood ready to provide foreign exchange at the current rate to maintain the stability of the exchange rate" (Central Bank Annual Report 1970, p. 70). In 1970 and 1971, the Central Bank limited its intervention activities in the foreign exchange market, making sales of only U.S.$5 million and U.S.$23.5 million, respectively. Beginning in 1972, however, Central Bank intervention increased substantially, its sales and purchases of foreign exchange accounting for a markedly increased proportion of the total volume of foreign exchange transactions undertaken by commercial banks. In 1970, this proportion was only 9.4 per cent; by 1972, this had risen to about 60 per cent.[7] Another instrument which has been used by the Central Bank to manage the exchange rate is the maintenance of bands or margins around the guiding rate within which the peso-dollar rate is allowed to float. Until April 1972, the margins were 3/4 of one per cent above and

one per cent below the guiding rate. Subsequently, the exchange rate was allowed to float within a wider band of 4-1/2 per cent on each side of the guiding rate for the trading day.

Aside from these forms of control over the exchange rate, there are a number of trade and exchange restrictions which are still in operation, although as mentioned above, there has been less reliance on the former in the 1970's as compared to the preceding two decades. The regulations involving invisible payments and the capital account are still quite stringent. For instance, while remittances of profits and dividends are generally free of restrictions, there are quantitative limitations on invisible payments such as those for travel abroad, educational expenses of students abroad and maintenance of dependents abroad. Residents are not allowed to purchase foreign securities nor maintain bank balances overseas. However, they can maintain foreign currency bank deposits domestically, provided the source of the deposit is eligible for deposit.[8] All foreign borrowings require prior Central Bank approval.

It should be clear by now that the exchange rate system in the Philippines is one of limited rather than full flexibility, so that the regime may be more precisely described as a "crawling peg" (Williamson 1965, p. 2) rather than floating.[9] This exchange arrangement is not unexpected in a developing country like the Philippines where certain structural characteristics preclude free floating as a feasible alternative. Table 1 presents a selected set of indicators of the Philippine economy which can help explain the country's choice of exchange rate regime, among other things.

Table 1

SELECTED ECONOMIC INDICATORS

I.	**Gross Domestic Product (GDP), Population and Inflation Rate**		
	A. GDP (in million U.S. dollars, 1980)[a/]	31,337	
	B. Population (in thousand persons, mid-1980)	48,317	
	C. GDP Per Capita (in U.S. dollars, 1980)	649	
		1960-70	1970-80
	D. Growth Rate of Real GDP (% per year)	4.8	5.9
	E. Inflation Rate (%)		
	Consumer Price Index	5.3	13.8
	Wholesale Price Index	5.7	17.1
	GDP Deflator	5.7	13.3

		1965	1970	1975	1980
II.	**Trade and Exchange Market Related Indicators**				
	A. Proportion of Trade in Goods and Services in GDP (%)	34.4	38.4	43.9	46.2
	B. Share of Traditional Exports in Total Exports (%)[b/]	79.5	78.3	63.3	43.9
	C. Share of Top Two Trading Partners in Total Trade (%)				
	a. United States	39.8	35.0	24.8	25.3
	b. Japan	25.9	35.0	31.2	22.6
	c. U.S. and Japan	65.7	70.0	56.0	47.9
	D. Imports According to End Use (%)				
	a. Capital Goods[c/]	18.7	18.8	19.5	16.2
	b. Intermediate Goods[d/]	62.8	74.3	72.6	79.4
	c. Consumer Goods	18.5	6.9	7.9	4.4
	E. Ratio of Commercial Bank to Central Bank Holdings of Foreign Exchange Assets (%)	48.7	51.0	52.8	60.0

Sources: Central Bank of the Philippines, Statistical Bulletin; National Economic and Development Authority, Philippine Statistical Yearbook; IMF, Financial Statistics.

a/ Based on the GDP at 1980 pesos and the average 1980 exchange rate.
b/ Coconut oil, copra, copra meal or cake, dessicated coconut, logs and lumber, sugar and copper concentrates.
c/ Machinery and equipment.
d/ Unprocessed and semi-processed raw materials, and supplies.

It can readily be seen why the Philippines opted to continue to be in the U.S. dollar currency area during the period of generalized floating among major currencies. Aside from the fact that the peso has been historically tied to the U.S. dollar, the U.S. has remained the Philippines' principal trading partner, although Japan has posed a serious threat to the U.S. in the latter regard. That free floating is not a feasible alternative for the Philippines can be explained by the relative openness of the economy and by the absence of an internationally integrated financial market (Crockett and Nsouli 1977; Branson and Katseli 1978). The relatively open character of the Philippine economy (the proportion of trade in goods and services in GDP was 46.2 per cent in 1980) does not make floating feasible because domestic residents would tend to want contracts to be effectively denominated in foreign currency, and there would be little basis for demand for domestic currency. On the other hand, because the domestic capital market is not integrated internationally, the supply of and demand for foreign exchange would be determined mainly by current account flows, and short-run stability depends on the Marshall-Lerner conditions concerning trade elasticities. If these conditions do not hold in the short-run, e.g., in view of lags in responses and relatively inflexible prices, then floating would be unstable. This would result in a considerable increase in uncertainty, which would, in turn, adversely affect trade and investment flows.

Changes in Nominal Exchange Rates

From January 1970 to the end of the decade, the peso-dollar exchange rate increased by 93.6 per cent from ₱3.92 per U.S. dollar to ₱7.59 per

U.S. dollar. The largest increase during this period occurred in 1970 when the rate rose from ₱3.92 per U.S. dollar to ₱6.43 per U.S. dollar, representing a 64.0 per cent increase. In comparison, the exchange rate in the 1960's depreciated by 95.0 per cent from ₱2.00 per U.S. dollar to ₱3.90 per U.S. dollar.

Since March 1973, when the system of generalized currency floating was initiated, the peso-dollar rate has risen by 20.1 per cent from ₱6.77 per U.S. dollar in March 1973 to ₱8.13 per U.S. dollar in December 1981. This is a considerably smaller magnitude of depreciation as compared to those resulting from the 1960 and 1970 devaluations. Moreover, adjustments have been made continuously in small increments (Figure 1). The average absolute monthly percentage change in any year since 1973 has been less than one per cent, the largest being 3/4 of one per cent. On an annual basis, the average absolute percentage change is 2.2 per cent per year. In this connection, it is significant to observe the prevailing interest rate differentials during this period. As Table 2 shows, the differentials have been generally kept well over the average rate of crawl of the exchange rate, although there were a few exceptions, e.g., the rate differentials with the U.K. in 1974 and 1977-1979, and with the U.S. in 1979.

Based on the predominant trend of nominal exchange rates, the exchange experience of the Philippines during the period of generalized currency floating can be divided into four sub-periods. The first is during March 1973 to the third quarter of 1974 when rates were slightly appreciating. The second covers the period from the last quarter of 1974 to the third quarter of 1975 when depreciation was the dominant trend. The third period, from the last quarter of 1975 to 1979, is characterized by a slight appre-

Figure 1

NOMINAL PESO-U.S. DOLLAR EXCHANGE RATE

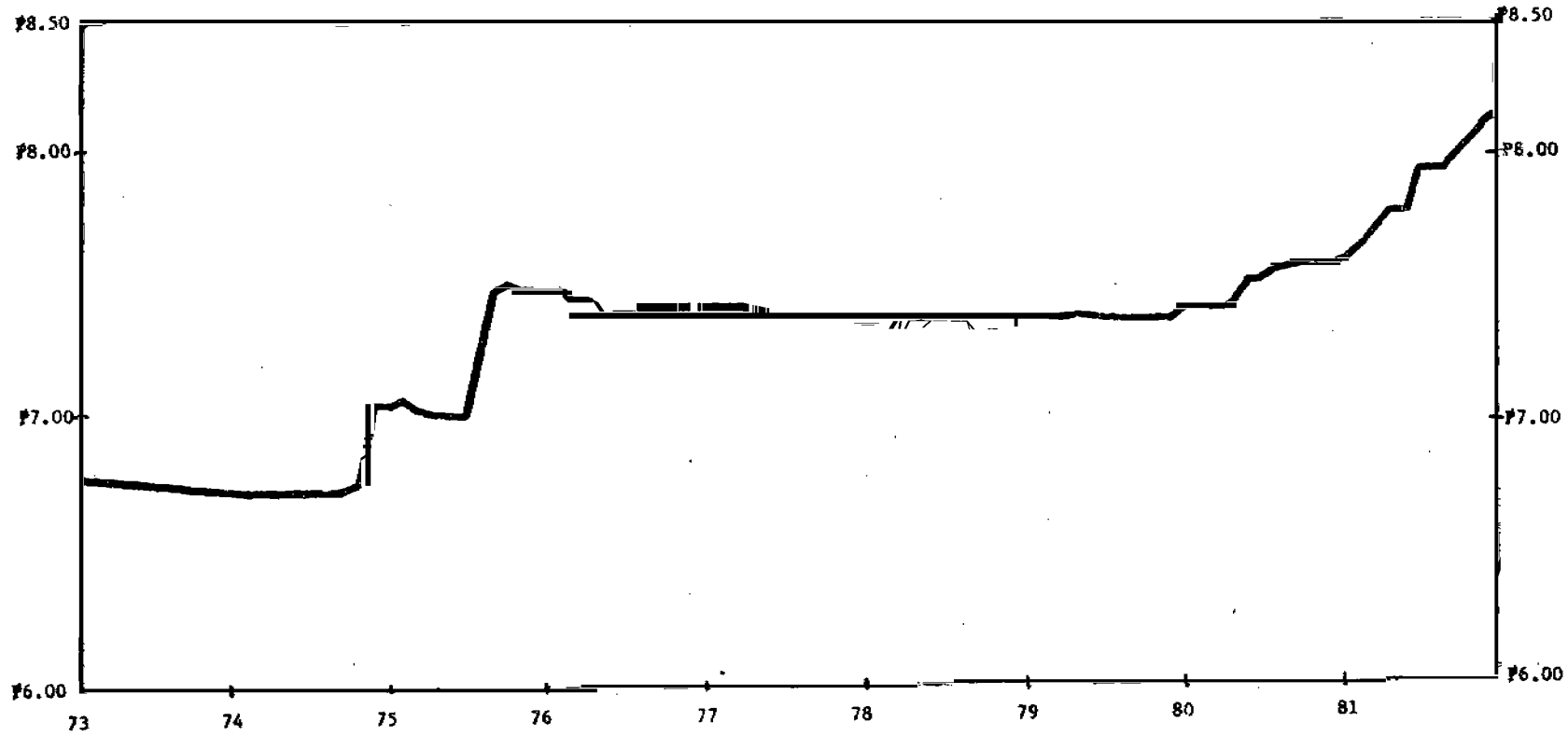


Table 2

INTEREST RATES IN THE PHILIPPINES AND SELECTED COUNTRIES: 1973-1981
(End of Period Per Cent Per Annum Rates)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
Philippines[a/]	9.74	10.03	16.90	15.42	12.00	11.52	12.70	14.85	16.91
HongKong[b/]	8.00	6.00	3.25	1.75	9.25	4.50	9.25	13.00	14.00
Singapore[c/]	n.a.	n.a.	n.a.	3.76	4.54	5.29	7.15	11.22	12.05
United States[d/]	7.41	7.11	5.21	4.41	6.14	9.34	12.10	13.60	12.97
Japan[e/]	5.80	6.83	5.68	4.15	6.06	4.86	8.13	9.90	6.75
Germany[f/]	7.00	5.63	3.15	2.65	3.96	4.06	9.58	10.27	10.82
United Kingdom[g/]	8.31	12.42	10.99	10.64	13.51	11.56	15.84	13.02	14.78
Switzerland[h/]	5.50	6.00	1.50	1.12	1.12	0.13	4.42	5.75	8.75

Sources: Philippines - Philippine Financial Statistics; HongKong - HongKong Monthly Digest of Statistics; Singapore - The Monetary Authority of Singapore Statistical Bulletin; All Others - O.E.C.D. Main Economic Indicators.

a/ 1973-1974: 91-day Treasury Bills' rate; 1975-1981: 61-90-day money market rates.
b/ Three-month time deposit rates.
c/ Three-month deposit rates.
d/ 90-day Treasuy Bills' rates.
e/ 1973-1976: 60-day Treasury Bills' rates; 1977-1981: "Gensaki" or money market rates.
f/ Three-month loan rates.
g/ 91-day Treasury Bills' rate.
h/ Three-month deposit rates.

ciation and relative stability of the exchange rate. The last period consists of the more recent years from 1980 to 1981, when the rates started to depreciate once again. It would be useful to note the country's price experience during these periods. The annual rate of domestic inflation, as measured by the consumer price index, was 25 per cent during the first period, 8.1 per cent during the second period, 10.1 per cent during the third period, and 14.8 per cent during the last period.

The most notable feature of the exchange rate changes decribed above is the rather limited extent of nominal depreciation from 1973 to 1981. Considering the magnitude of the country's trade and current account deficits since 1974 (Table 3), as well as the relatively rapid rate of domestic inflation (Figure 2),[10] one would have expected to see a flexible exchange rate resulting in a larger depreciation of the domestic currency vis-a-vis the U.S. dollar. In general, a country confronted by current account deficits can make the necessary adjustments by financing the deficits through borrowings from abroad or drawing down on reserves, by allowing the exchange rate to depreciate, or by depressing incomes or lowering prices. These options are of course not mutually exclusive. In the case of the Philippines, it appears that the decision taken by the monetary authorities was to minimize the change in the nominal exchange rate principally through external financing.

From 1973 to 1981, net long-term capital inflows averaged U.S.$906 million per year. In contrast, the combined net long-term capital inflows during the immediately preceding ten years amounted to only U.S.$752 million. The country's external long-term and medium-term debt outstanding increased

Table 3

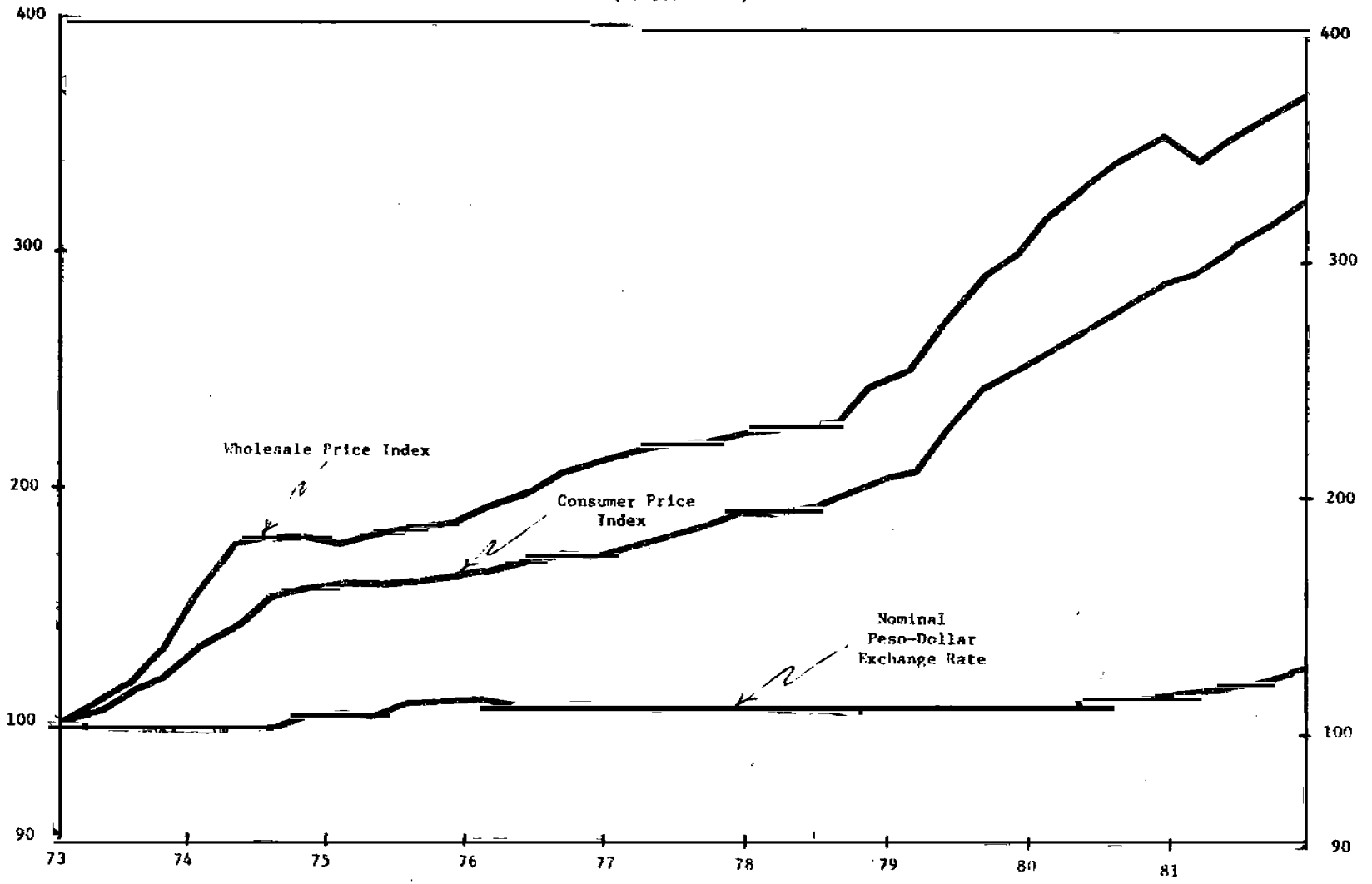
SELECTED BALANCE OF PAYMENTS DEVELOPMENTS, 1973-1981
(In Million U.S. Dollars)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
Exports, f.o.b.	1,886	2,725	2,294	2,574	3,151	3,425	4,601	5,788	5,722
Imports, f.o.b.	1,596	3,143	3,459	3,634	3,915	4,732	6,142	7,727	7,946
Trade Balance	290	-418	-1,165	-1,060	- 764	-1,307	-1,541	-1,939	-2,224
Services (Net)	-	- 34	- 45	- 259	- 248	- 178	- 390	- 546	- 541
Transfers (Net)	246	276	318	269	260	312	355	434	472
Current Account Balance	536	- 176	- 892	-1,050	- 752	-1,173	-1,576	-2,051	-2,293
Official Grants and Long-Term Capital (Net)	135	172	482	1,184	878	1,062	1,250	1,077	1,739
Basic Balance	671	- 4	- 410	134	126	- 111	- 326	- 974	- 554

Source: Central Bank of the Philippines, Annual Reports.

Figure 2

NOMINAL PESO-U.S. DOLLAR EXCHANGE RATE,
CONSUMER AND WHOLESALE PRICES
(1973:I = 100)



by almost six times from U.S.$2.0 billion in December 1973 to U.S.$11.4 billion in December 1981; and at least up to 1980, the magnitude of external financing enabled the Philippine monetary authorities not only to maintain the level of the country's international reserves but also to raise it (Table 4). In 1973, international reserves of the Central Bank stood at U.S.$1.0 billion. By 1980, Central Bank reserves have reached U.S.$3.2 billion. In terms of monthly merchandise imports which a particular level of reserves can finance, the Central Bank has maintained a reserve level which has not fallen below an average equivalent of 4.3 month's imports since 1973. The corresponding figure in the 1960's and the first two years of the 1970's was 2.5 months of imports. In 1981, the current account deficit reached a peak of U.S.$2.3 billion and could not be fully financed by net capital inflows amounting to only U.S.$1.7 billion. The Central Bank obviously decided to draw down on its reserves rather than allow a drastic depreciation of the currency.

Based on an interview with senior government officials, Bautista (1978, p. 4) explains the policy of shoring up foreign exchange reserves as follows: "The unexpectedly large current account deficit in 1974 and the perceived instability in the world economy 'scared' the monetary authorities into exerting efforts to borrow from the international capital market and build up the Central Bank reserves. In the succeeding two years of increasingly worsening current account balance, the strategy apparently adopted was to maintain the high reserve level as a safeguard against speculative activities in the foreign exchange market. It is also claimed that the cost of holding these reserves has not been substantial, since their yields from short-term placements and time deposits have been relatively high (averaging 6-7%)."

Table 4

INTERNATIONAL RESERVES, 1970-1981
(In Million U.S. Dollars)

Year	Official Reserves[a/]	Months of Imports Coverage
1970	251	2.8
1971	376	3.8
1972	549	5.3
1973	1,037	7.8
1974	1,503	5.7
1975	1,361	4.7
1976	1,642	5.4
1977	1,525	4.7
1978	1,883	4.8
1979	2,423	4.7
1980	3,155	4.9
1981	2,574	3.7

Source: Central Bank of the Philippines

[a/] Including gold and SDR's.

While the level of international reserves in the Philippines may be relatively high in a historical sense, it is not necessarily so by international standards. Table 5 shows that in 1979, the level of Philippine international reserves in terms of months of import coverage was only slightly higher than the average for low income countries (countries with per capita GNP of up to U.S.$380 based on World Bank classification). On the other hand, the comparable figures for middle income countries (countries with per capita GNP of over U.S.$380) and industrialized countries were slightly more than that in the Philippines. The median reserve level in months of import coverage for all middle-income countries included in the 1981 World Bank World Development Report is 4.5 months, very close to the estimate for the Philippines of 4.7 months.

The Black Market for Foreign Exchange and Speculative Pressures

Has disruptive speculation become less of a problem during the more recent period of limited exchange rate flexibility? During the earlier period of adjustable par values, anticipated large devaluations presented considerable opportunities for obtaining substantial payoffs from speculation. Since exchange rate adjustments have been made frequently in relatively small doses after 1970, there is a great likelihood that incentives for speculation may have been somewhat reduced. Haberler (1972, p. 3), referring to the Brazilian experience, suggests that even in the case where the currency is expected to go down and never move up in the foreseeable future, "... speculation ceases to be a serious problem if exchange rate changes are small enough and frequent enough."[11] In order to ascertain

Table 5

INTERNATIONAL RESERVES OF SELECTED COUNTRIES
AND GROUPS OF COUNTRIES, 1979
(In months of import coverage)

A. Groups of Countries (Averages)	
1. Low-income countries	4.2
2. Middle-income countries	5.2
3. Industrial countries	5.0
B. Selected Countries	
1. South Korea	1.5
2. Mexico	1.7
3. Pakistan	2.5
4. Indonesia	3.4
5. Sri Lanka	4.1
6. Singapore	4.1
7. Brazil	4.1
8. Thailand	4.2
9. Bolivia	4.5
10. Philippines	4.6
11. Burma	4.8
12. Malaysia	5.6
13. Chile	5.7
14. Paraguay	8.8
15. India	10.2
16. Colombia	12.7
17. Argentina	13.4

Source: World Bank, World Development Report, 1981.

whether this has indeed been the case for the Philippines, the ratios of black market rates over official or guiding rates in the 1950's and 1960's are compared with those in the 1970's. Inasmuch as the Philippine black market for foreign exchange is a highly speculative one, such a comparison may at least provide a rough idea of the relative extent of speculative activity during the period of fixed and flexible exchange rates.

As Table 6 shows, the exchange rate was subjected to tremendous speculative pressures in the 1950's. The smallest margin of black market rates over official rates was 24 per cent at the beginning of the decade. Thereafter, the margins exhibited an upward trend, so that by 1959, the black market rate was double the official exchange rate. It was during this period when various trade and exchange controls were introduced and expanded.[12] With the initiation of liberalization measures in 1960, the margins were reduced to about 30 per cent in 1960 and 20 per cent in 1961. The margins further contracted in 1962 when exchange decontrol was implemented. In the following years of decontrol until the first half of 1967, the black market rate for foreign exchange stayed close to the official exchange rate.[13] However, when the trade balance worsened from a deficit of U.S.$25 million in 1966 to a deficit of U.S.$242 million in 1967, the black market became bullish again; the premium moved from 16 per cent during the last quarter of 1968 to 43 per cent in the same quarter the following year. In January 1970, one month before the peso was allowed to float, the margin stood at almost 60 per cent.

The 1970 exchange reform appears to have relieved the pressure on the exchange rate, and for the rest of the 1970's, the margins would remain within 5-10 per cent except in the last quarter of 1975, when the margin hit 14 per

Table 6

RATIOS OF BLACK MARKET TO OFFICIAL EXCHANGE RATES
(Quarterly: 1950-1979)

Year	I	II	III	IV	Average
1950	1.24	1.41	1.41	1.84	1.48
1951	1.73	1.61	1.32	1.33	1.50
1952	1.33	1.24	1.29	1.33	1.30
1953	1.33	1.32	1.30	1.31	1.32
1954	1.32	1.32	1.38	1.44	1.36
1955	1.47	1.40	1.38	1.44	1.42
1956	1.53	1.59	1.61	1.77	1.63
1957	1.74	1.78	1.69	1.69	1.73
1958	1.70	1.61	1.70	1.77	1.70
1959	1.89	2.10	2.16	1.90	2.01
1960	1.29	1.28	1.32	1.26	1.29
1961	1.06	1.15	1.20	1.32	1.18
1962	1.00	1.06	1.06	1.08	1.05
1963	1.01	1.01	1.01	1.01	1.01
1964	1.00	1.00	1.00	1.00	1.00
1965	1.01	1.03	1.05	1.03	1.03
1966	1.03	1.02	1.02	1.02	1.02
1967	1.02	1.02	1.08	1.09	1.05
1968	1.06	1.09	1.05	1.16	1.09
1969	1.18	1.19	1.27	1.43	1.27
1970	1.27	1.07	1.05	1.09	1.12
1971	1.10	1.10	1.08	1.08	1.09
1972	1.07	1.05	1.03	1.05	1.05
1973	1.07	1.09	1.06	1.01	1.06
1974	1.03	1.03	1.06	1.06	1.05
1975	1.04	1.06	1.10	1.14	1.09
1976	1.08	1.04	1.05	1.08	1.06
1977	1.09	1.05	1.05	1.02	1.05
1978	1.04	1.07	1.06	1.09	1.07
1979	1.09	1.07	1.06	1.08	1.08

Sources: Official exchange rates - IMF Financial Statistics; Black market exchange rates - Pick's Currency Yearbook.

cent. The relatively stable and lower margins during this more recent exchange rate history are worth noting.[14] Considering the country's substantial trade and current account deficits since 1974 and the relatively high rates of domestic inflation, a rapid climb in the margins of black market over guiding rates could have easily taken place. That they did not do so suggests that the system of gradual and continuously changing exchange rates, while not eliminating disruptive speculation totally, has dampened it to a good extent.

3. Generalized Floating of Major Currencies and Effective Exchange Rates

So far, the discussion has focused only on the nominal peso-dollar exchange rate. No account has yet been taken of the fact that since the early seventies, major currencies have been floating. Under such circumstances, pegging to any one of them implies floating vis-a-vis the currencies of other trading partners. It is therefore necessary to have a measure of the value of the domestic currency in relation to a representative set of currencies rather than merely to that of the intervention currency. Such a measure is the "effective exchange rate" (EER), which is defined as a weighted average of the exchange rates of the Philippines' trading partners.[15] An EER index measures the proportional change in the Philippine peso vis-a-vis the currencies of the country's trading partners relative to a selected base period (Rhomberg 1976). Different EER indices can be computed, depending on, among others, the base period selected, the partner countries included, the weighing scheme employed and the type of averaging formula

used. The factors of greatest consequence are, however, which partner countries to include in the index and what weighing scheme to use. The former is dictated by the geographical pattern of trade, while the appropriate choice of weights depends on the particular objectives of analysis or policy (Branson and Katseli 1978, 1980). If r_i denotes units of domestic currency per unit of the currency of trading partner i, and w_i represents the weight for trading partner i, then the effective exchange rate index E is given by

$$E = \sum_i w_i \dot{r}_i \qquad (1)$$

where a dot over a variable indicates a proportional change in that variable, $\sum_i w_i = 1$, and i = 1,...,n trading partners.

Let r_o = units of home currency per unit of numeraire currency (in the Philippine case, pesos per U.S. dollar), and r_i^* = units of currency i per unit of numeraire, e.g., yen per U.S. dollar, DM per U.S. dollar, etc. The exchange rate r_i is obtained from the ratio of r_o to r_i^*; hence

$$\dot{r}_i = \dot{r}_o - \dot{r}_i^* \ . \qquad (2)$$

Substituting (2) in (1) and recalling that $\sum_i w_i = 1$ yields

$$E = \dot{r}_o - \sum_i w_i \dot{r}_i^* \ . \qquad (3)$$

It can be readily seen from (3) that even if the peso-dollar rate r_o were to remain fixed, the effective exchange rate could change whenever the dollar's relationship with the currency of a third country changes. More important, these changes may not reflect the balance of payments adjustment needs of the country and may undermine rather than enhance the pursuit of domestic policy objectives. For example, the country may find its effective exchange rate appreciating when the current account is weakening and vice versa.

In principle, it would be possible to maintain a "desired" or target effective exchange rate by making compensatory adjustments in the intervention currency. In terms of (3), this means setting $E = 0$, giving

$$\dot{r}_o = \sum_i w_i \dot{r}_i^* \quad . \tag{4}$$

This is a policy that adjusts the intervention rate to hold the nominal effective exchange rate constant. The policy can alternatively be to stabilize a given real rather than nominal exchange rate. In this case, the real effective exchange rate index $\bar{E}$ is defined by

$$\bar{E} = \sum_i w_i (\dot{r}_i + \dot{p}_i - \dot{p}_o) \tag{5}$$

where p_o = home-country price or cost index; and p_i = price or cost index in country i. Substituting (2) into (5), adding and subtracting the cost or price index in the numeraire country, p_n, and recalling once again that $\sum_i w_i = 1$, the expression for $\bar{E}$ becomes

$$E = \dot{r}_o + \dot{p}_n - \dot{p}_o - \sum_i w_i (\dot{r}_i^* + \dot{p}_n - \dot{p}_i) \quad . \tag{6}$$

The policy of stabilizing a target real effective exchange rate requires that $\bar{E} = o$, so that

$$\dot{r}_o + \dot{p}_n - \dot{p}_o = \sum_i w_i(\dot{r}_i^* + \dot{p}_n - \dot{p}_i) \quad . \qquad (7)$$

As (4) and (7) imply, pegging to a basket of currencies defined by a set of weights w_i is equivalent to holding constant an effective exchange rate similarly defined by those weights (Branson and Katseli, 1982).

The Philippine monetary authorities are not known to have made adjustments in the peso-dollar exchange rate on the basis of the above considerations. Moreover, the International Monetary Fund (IMF) does not report the country as changing intervention rates according to a set of indicators, such as differential rates of inflation, trade or current account positions, stock of reserves, etc. Thus, it would be interesting to determine what the adjustments in the peso-dollar exchange rate imply in terms of nominal and real effective exchange rates, as well as what factors can explain the rate of crawl of the intervention rate r_o and effective exchange rate E.

Calculation of EER Indices

Quarterly nominal and real EER indices for the period 1973 to 1981 are computed using bilateral trade shares as weights.[16] The latter are based on the average annual trade shares of industrialized countries who have at least a one per cent share in total Philippine trade with all industrialized countries during 1974- 1976 (Table 7). The first quarter of 1973 (1973:I) is designated as the base period because the exchange rate prevailing at

Table 7

AVERAGE BILATERAL TRADE WEIGHTS[a/]
(1974-1976)

	Export Weights	Import Weights	Total Trade Weights
United States	42.1	34.6	38.2
Japan	37.8	41.0	39.6
Netherlands	8.6	1.9	5.0
Germany	3.8	5.6	4.8
United Kingdom	3.4	5.6	4.5
Australia	1.7	6.0	3.9
France	1.6	2.9	2.3
Canada	1.0	2.4	1.7
TOTAL	100.0	100.0	100.0

a/ Computed from trade data published in IMF, Direction of Trade.

that time may be what could be considered as a "desirable" level.[17] Two sets of real EER indices are calculated, namely: one based on the consumer price index (CPI) and another based on the wholesale price index (WPI). The data for exchange rates and prices are those reported in IMF's International Financial Statistics, while the bilateral weights are derived from IMF's Direction of Trade.

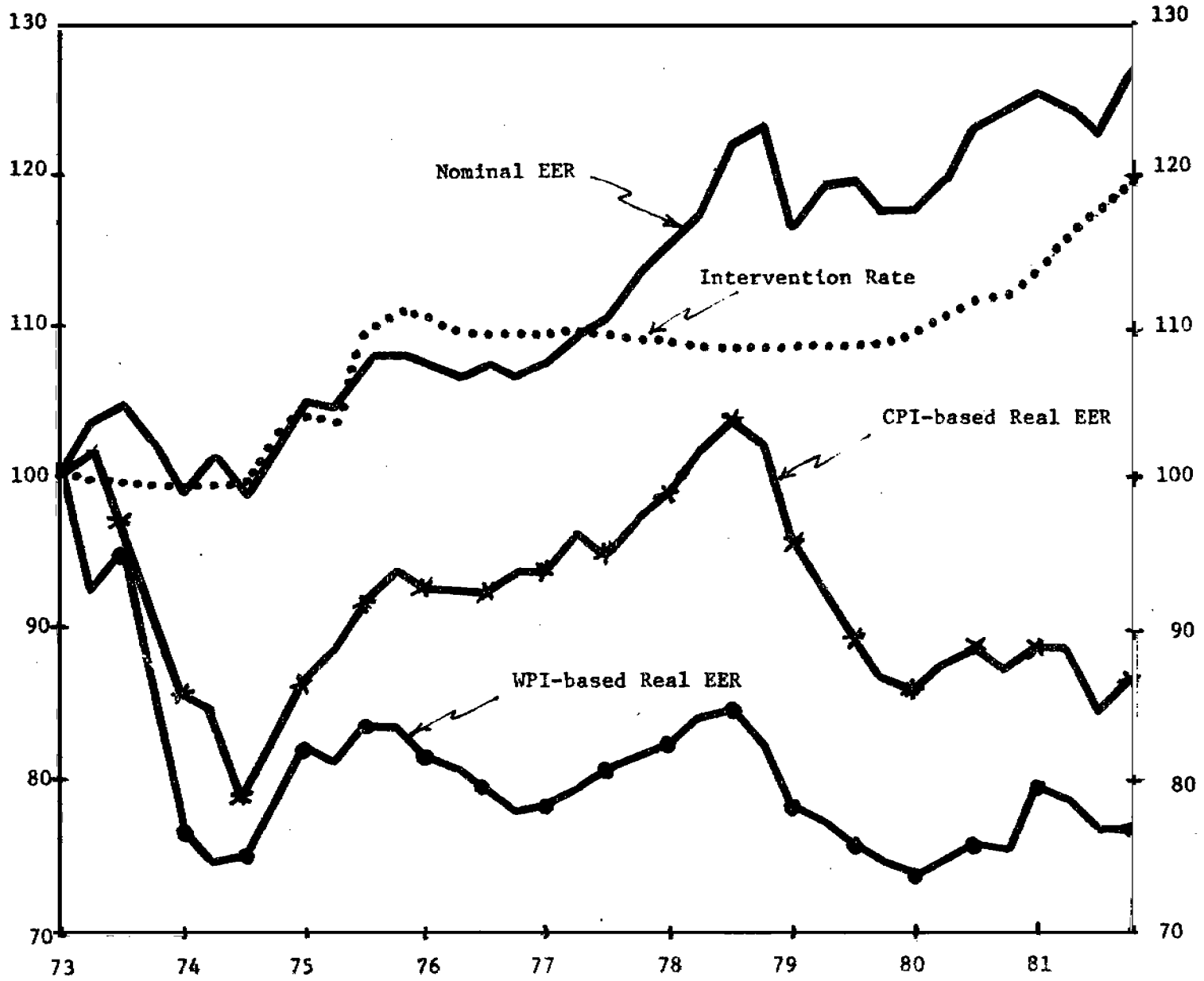
Analysis of EER Movements

From 1973:I to 1981:IV, the trade weighted effective exchange rate depreciated by 26.8 per cent. As Figure 2 shows, the effective depreciation was not continuous, but the trend is clear. The trends of both the CPI-based real EER and WPI-based real EER are less clear, although both show an effective appreciation in 1981:IV relative to the base period.[18] The CPI-based real EER is characterized by appreciation during 1973:I to 1974-III, depreciation in 1974:IV to 1978:III, appreciation in 1978:IV to 1979:IV and relative stability in 1980:I to 1981:IV. The WPI-based real EER follows roughly a similar trend except in the second (1974:IV to 1978:III) and last (1980:I to 1981:IV) sub-periods. Over the whole period from 1973:I to 1981:IV, all quarterly real EER's lay below the base quarter level, except for three quarters in 1978 when the CPI-based real EER exceeded the EER in 1973:I. In 1981:IV, the CPI-based real EER was 13.4 per cent below the 1973:I rate, while the WPI-based real EER was 23.3 per cent below the base quarter level.

To what extent have nominal EER changes been due to adjustments in the peso-dollar intervention rate r_o, and to what extent have they been

Figure 3

NOMINAL AND EFFECTIVE EXCHANGE RATES



due to exogenous currency realignments? The ratio of the net change in the currencies of the Philippines' major trading partners to the change in the intervention currency provides an idea of the relative magnitudes involved. Over the period 1973:I to 1981:IV, the average quarterly ratio is 1.42, implying that on average, exogenous currency changes have been 42 per cent greater than those undertaken by the monetary authorities. Excluding the first year of generalized currency floating, however, the comparable ratio is 0.64, indicating that on average, exogenous currency movements have been relatively smaller than adjustments in the intervention rate. The relative influence on EER's of exogenous and policy-determined exchange rate changes can also be seen in Figure 3.

One aspect of exchange rate flexibility that has caused concern is that of the variability of exchange rates which may increase uncertainty and thus, adversely affect trade and investment flows (Bautista 1979). The risks involved can be reduced by recourse to the forward market, but as mentioned earlier, forward cover is only available to transactions involving swap arrangements; hence, the question of increased uncertainty remains an important issue. In order to determine whether effective exchange rates have exhibited more variability during the period of exchange rate flexibility relative to the earlier period of fixed exchange rates, the variability of monthly nominal effective exchange rates during 1973-1981 is compared to the corresponding variability during 1964-1972. The measure of variability employed is the standard deviation of monthly nominal exchange rates about the mean during each period. For purposes of comparison, the variability of the intervention exchange rate (r_o) is also presented in Table 8 below.

Nominal effective rates do not appear to have become more variable during the period of generalized currency floating. Their variability is in fact reduced when the first two years of the floating period are excluded. Intervention rates exhibited a similar pattern, their variability being very much reduced in 1973-1981. Intervention rates were clearly less variable than effective exchange rates in the recent period, but slightly more variable than the latter in 1964-1972. These observations bring to mind Black's (1976) conclusion that "countries which ... maintain overvalued exchange rates and then devalue them sharply suffer high variances in their effective exchange rates ..." (pp. 35-36).

Table 8

VARIABILITY OF INTERVENTION AND EFFECTIVE EXCHANGE RATES

	1964-1972	1973-1981	1975-1981
Effective Exchange Rates	16.7	12.0	10.7
Intervention Rates	17.6	5.2	3.3

4. Official Exchange Market Intervention Behavior

Section 2 of this paper indicated that because of the lack of international capital market integration, the Philippine financial system is not able to provide a stable market in foreign exchange, thus, precluding free floating as a feasible alternative. Under such circumstances, the Central

Bank must "make the market" (Branson and Katseli 1978, p. 10); the far reaching direct and indirect controls exercised by the Philippine monetary authorities over the foreign exchange market can be viewed in this context.

Since changes in the exchange rate can be expected to be greatly influenced by official actions in the foreign exchange market, one way of analyzing movements in the peso-dollar exchange rate is to examine the behavior of the monetary authorities in the exchange market. Along this line, official exchange market intervention or reaction functions will be estimated for the period 1973-1981, using quarterly data. The results of the analysis should be qualified by the partial character of the approach adopted here, as well as the inadequate treatment of the problem of simultaneity. Inasmuch as ideally, one would model official exchange market behavior within a complete balance of payments framework, the effort taken in this paper should be considered as only one step towards the specification of an exchange market or balance of payments model. Furthermore, the estimated reaction functions should not be expected to necessarily hold beyond the sample period or at all times during this period.

The Central Bank has no explicit exchange intervention policy except that of "maintaining the stability of exchange rates"; hence, alternative hypotheses regarding how the rate of crawl is determined are tested. Various suggestions concerning possible intervention rules (e.g., Cooper 1970; IMF Committee of Twenty 1974; Black 1976; Kenen 1980) served as the starting point for formulating hypotheses about the monetary authorities'

behavior in the foreign exchange market. The alternative hypotheses to be tested are that exchange rates are adjusted by the Central Bank on the basis of:

I. Equation (4) above, which implies that the Central Bank acts to stabilize the effective exchange rate.

II. A Purchasing-Power-Parity (PPP) rule, according to which exchange rate adjustments are made to compensate for inflation differentials between the domestic economy and those of major trading partners.

III. A reserve indicator, which calls for exchange rate changes depending on the stock of or changes in international reserves.

IV. A balance of payments indicator, which links exchange rate alterations to current account or basic balance developments.

Foreign exchange market intervention functions will be estimated using the change in the exchange rate as the dependent variable and indicators of intervention rules I to IV as explanatory variables. For the jth intervention rule, for example, the general form of the regression equation is given by

$$E^* = a_{jo} + a_{j1}I_{j1} + \ldots + a_{jN}I_{jN} + u \qquad (8)$$

where E^* = change in the exchange rate; $I_{j1},\ldots,I_{jN}$ = indicators for the jth intervention rule; $a_{jo}, a_{j1},\ldots,a_{jN}$ are parameters to be estimated; and u = error or disturbance term. E^* can be interpreted as the official target change in the exchange rate which is realized in every period; and

the I's, as determinants of the target exchange rate change (Helliwell 1979). In actual tests, E* is expressed in index form (1973:I = 100). Indices of intervention and effective exchange rates are alternatively used as the dependent variable, except in the case of intervention rule I where only the former is used. Lagged values of indicators are included as explanatory variables, where appropriate.

The regression results are summarized in Table 9. Only the "best" equations in each hypothesized set are reported in the table in order to have a clearer focus in the analysis. The criteria for the best estimated equation in each set consist of the standard tests for goodness of fit, i.e., the coefficient of multiple determination adjusted for degrees of freedom ($\bar{R}^2$), the standard errors (or t-statistics) of the estimated coefficients, and the Durbin-Watson (D.W.) statistic.[19] The results of other tests are mentioned in the text. An overview of the findings follows:

1. No support is provided to the hypothesis that the monetary authorities act so as to stabilize the effective exchange rate. Except for the coefficient of the Australian dollar, all the estimated coefficients are not significantly different from zero. Nevertheless, it is interesting to note that the U.S. dollar has the highest implicit weight of 36.0 per cent (derived from the relationship $w_{u.s.} = 1 - \sum_i \bar{w}_i$, where the weights $\bar{w}_i$'s are the estimated coefficients). In an alternative regression using the Japanese yen as the numeraire, an implicit weight for the U.S. dollar of 60.0 per cent was obtained. This is not surprising, since the Philippine currency has been closely tied to the U.S. dollar.

Table 9

SUMMARY OF REGRESSIONS[a/]

I. Effective Exchange Rate Rule

$$\begin{aligned} LNER = {} & 2.76 - 0.037LJ - 0.081LG + 0.078LF + 0.063LN \\ & (3.70) \quad (0.625) \quad (0.504) \quad (1.007) \quad (0.351) \\ & + 0.060LK + 0.177LA + 0.148LC \\ & (1.000) \quad (2.199) \quad (1.052) \end{aligned}$$

$\bar{R}^2 = 0.998$ d.w. = 1.71 $\rho = 0.86$

NOTE: LNER = log of nominal exchange rate index; LJ, LG, LF, LN, LK, LA, LC = log of exchange rate indices of currencies of Japan, Germany, France, Netherlands, United Kingdom, Australia and Canada (in terms of U.S. dollars), respectively.

II. PPP Rule

A. $LNER = 4.66 + 0.197LPF$
$\quad (177.4) \quad (1.255)$

$\bar{R}^2 = 0.996$ d.w. = 1.20 $\rho = 0.91$

B. $LEER = 4.69 + 0.134LPF$
$\quad (91.9) \quad (0.931)$

$\bar{R}^2 = 0.990$ d.w. = 1.82 $\rho = 0.93$

NOTE: LNER = as defined in I above; LEER = log of effective exchange rate index; LPF = log of the ratio of Philippine CPI to weighted average of foreign CPI.

Table 9 (cont'd.)

III. Reserve Indicators

A. Stock of Reserves (SRES)

1. NER = 104.7 + 0.002SRES
(31.2) (1.310)

$\bar{R}^2$ = 0.922 d.w. = 0.96 ρ = 0.87

2. EER = 102.0 + 0.007SRES
(18.5) (2.338)

$\bar{R}^2$ = 0.812 d.w. = 1.71 ρ = 0.89

B. Change in Reserves (CRES)

1. NER = 108.3 - 0.002CRES
(51.3) (1.393)

$\bar{R}^2$ = 0.919 d.w. = 1.21 ρ = 0.90

2. EER = 51.3 - 0.003CRES
(25.2) (0.844)

$\bar{R}^2$ = 0.758 d.w. = 1.88 ρ = 0.92

C. Stock of Reserves and Change in Reserves

1. NER = 105.8 - 0.002SRES - 0.002CRES
(30.7) (0.847) (1.278)

$\bar{R}^2$ = 0.935 d.w. = 1.20 ρ = 0.89

2. EER = 102.8 + 0.006SRES - 0.002CRES
(18.0) (2.074) (0.674)

$\bar{R}^2$ = 0.803 d.w. = 1.80 ρ = 0.89

NOTE: NER = nominal exchange rate index; EER = effective exchange rate index.

Table 9 (cont'd.)

IV. Current Account and Basic Balance Indicators

A. Current Account Balance (CAB)

1. NER = 104.4 - 0.005CAB - 0.005CAB(-1) - 0.005CAB(-2)
(64.1) (2.724) (3.058) (2.837)

$\bar{R}^2$ = 0.948 d.w. = 1.46 ρ = 0.83

2. EER = 110.9 - 0.002CAB - 0.002CAB(-1) - 0.008CAB(-2)
(19.9) (0.710) (0.823) (2.586)

$\bar{R}^2$ = 0.788 d.w. = 1.75 ρ = 0.93

B. Basic Balance(BB)

1. NER = 108.3 - 0.003BB - 0.002BB(-1) - 0.003BB(-2)
(57.6) (1.510) (1.128) (1.530)

$\bar{R}^2$ = 0.922 d.w. = 1.17 ρ = 0.87

2. EER = 113.6 + 0.001BB - 0.004BB(-1)
(22.5) (0.537) (1.622)

$\bar{R}^2$ = 0.777 d.w. = 1.80 ρ = 0.94

NOTE: NER = nominal exchange rate index; EER = effective exchange rate index; CAB(-1) = CAB lagged one quarter; CAB(-2) = CAB lagged two quarters; same with BB.

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a/ Absolute values of t-statistics are in parentheses; estimation by Cochrane-Orcutt iterative technique.

2. The results, likewise, reject the hypothesis that the monetary authorities follow a PPP-rule. The coefficient of the relative CPI term is not close to unity and not significantly different from zero, while the constant is highly significant. This is true for both nominal and effective exchange rates. Regressions using WPI instead of CPI, and regression equations incorporating lagged values of the explanatory variable were also estimated, but these did not yield better results.

3. The data do not show that the stock of reserves (SRES) is an important determinant of nominal exchange rate adjustments, although it appears to be a significant determinant in the case of effective exchange rates. However, the coefficient of SRES is positive in the latter case, contrary to a priori considerations. The coefficient of SRES in the regression equation for nominal exchange rates is also positive and not significantly different from zero. Regressions using the change in reserves (CRES) instead of SRES, as well as those using both SRES and CRES as explanatory variables did not yield significant coefficients both for nominal and effective exchange rates.

4. The results support the hypothesis that the Central Bank, on average, adjusts nominal exchange rates in accordance with current account balance (CAB) developments. The relationship is significant up to a lag of two quarters, implying that adjustment of the intervention rate depends on current account developments during the current period and in the recent past. All of the coefficients are also of the expected signs. In regressions involving: (1) only the contemporaneous CAB; and (2) the contemporaneous

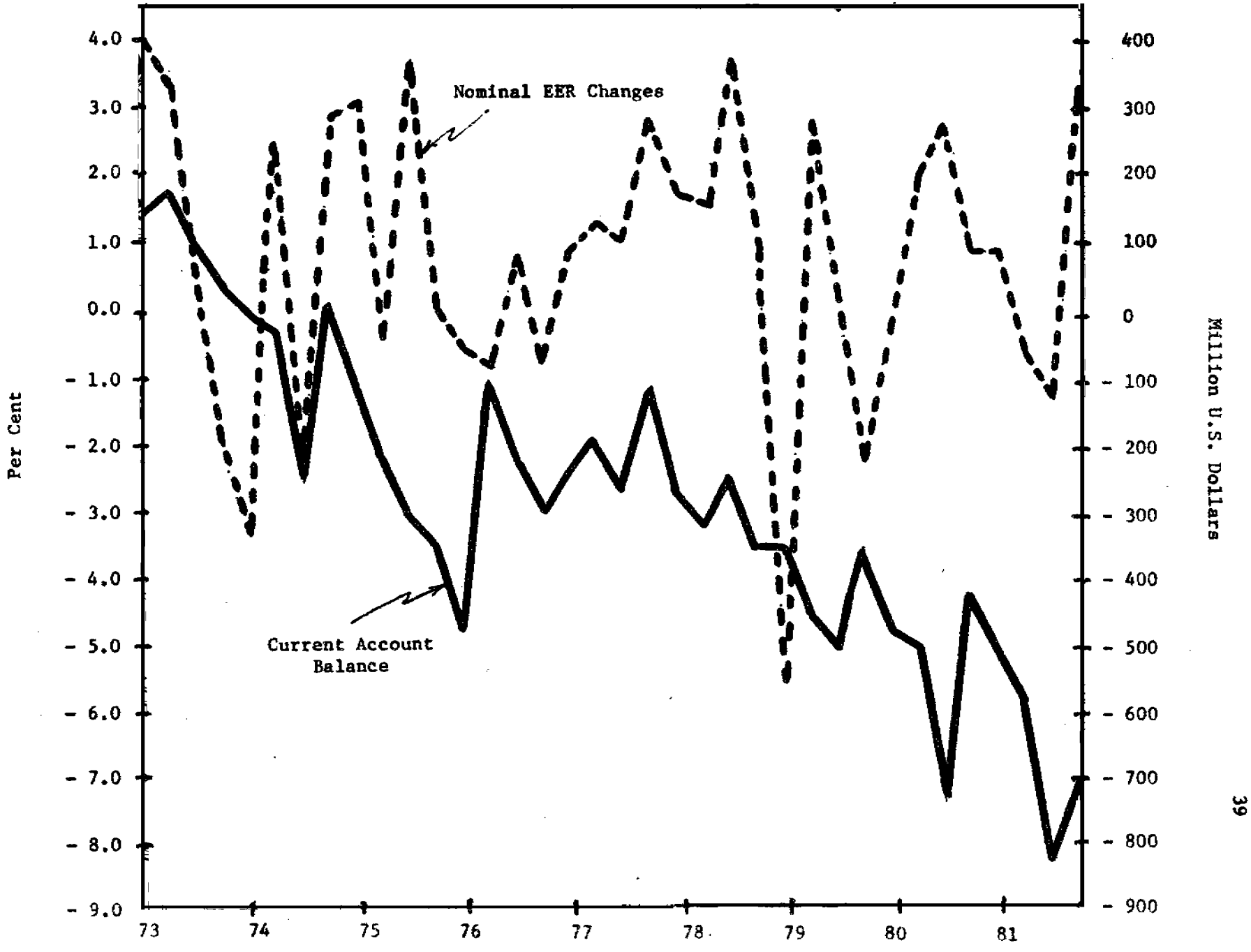
CAB and CAB lagged one quarter, all the coefficients of the explanatory variables are not significantly different from zero. On the other hand, the coefficients of CAB beyond a lag of two quarters are not significant. Regressions involving the basic balance, as well as those using the effective exchange rate as the dependent variable performed poorly. These results confirm the point made in Section 2 above regarding the paramount importance of the current account in determining the exchange rate in a financial setting such as the one in the Philippines.

5. On the whole, the regression equations for nominal exchange rates performed much better than those for effective exchange rates, implying that monetary authorities make adjustments in the intervention rate on the basis of nominal rather than effective exchange rate considerations. The outcome of the tests involving the hypothesized intervention rule I is consistent with this observation.

Thus, for the whole period 1973-1981, the Central Bank's reaction function for nominal peso-dollar exchange rates can be specified in terms of responses to exchange market pressure manifested by current account developments in the contemporaneous as well as fairly recent periods. However, the rate of response implied by the estimated coefficients is rather weak. Moreover, because attention is focused on nominal rather than effective exchange rates, changes in the latter have not always been in the direction suggested by the needed adjustment. A look at Figure 4 will show that in many instances during 1973-1981, a weakening of the current account is associated with an appreciation of the effective

Figure 4

NOMINAL EER CHANGES AND BALANCE ON CURRENT ACCOUNT



exchange rate and vice versa. In order to avoid such perverse developments, it would be necessary for the monetary authorities to use effective exchange rate formulations in determining the extent and direction of intervention. This need will become more pronounced if the trend towards greater geographical diversification of the country's external trade continues. Finally, in view of the more rapid rates of Philippine inflation relative to its trading partners, an exchange policy aimed at stabilizing a given real effective exchange rate may be advisable, in order to ensure that the country's international competitive position is not grossly eroded. At the minimum, the monetary authorities should be constantly vigilant of changes in real effective exchange rates.

5. Conclusions

This paper has attempted to evaluate, in a rather limited sense, the exchange experience of the Philippines during the period of generalized currency floating. The nature of the post-1970 exchange rate regime was analyzed, and various implications of flexibility of the country's own as well as other countries' exchange rates were discussed. Furthermore, changes in the peso-dollar exchange rate were examined in the light of official intervention behavior in the foreign exchange market.

The exchange rate regime in the Philippines during the post-1970 period is characterized by limited rather than full flexibility, and the domestic currency can be more appropriately described as "crawling" rather than floating vis-a-vis the U.S. dollar. In certain respects, this system

has assisted the country in weathering the external shocks which began with the oil crisis in 1973-1974 without the exchange upheavals that occurred in the 1950's and 1960's. While external balance is yet to be achieved, the system of limited exchange rate flexibility has probably prevented more fundamental disequilibrium from developing, making abrupt and disruptive exchange rate adjustments less of a possibility. In the future, it would be important for the monetary authorities to retain flexibility in exchange rate policy, in order to ensure continuing adjustments to external imbalances.

The results of the analysis of official intervention behavior in the Philippine foreign exchange market demonstrate the importance of the current account in the exchange rate adjustments undertaken by the monetary authorities, as well as the latter's commitment to the nominal peso-dollar exchange rate. The second observation can perhaps be explained by the peso's traditional link to the U.S. dollar; however, in a world of floating exchange rates, the country is not immune from disturbances generated by exogenous currency realignments. Thus, it would be important for the monetary authorities to consider effective exchange rate formulations in determining both the extent and direction of intervention. Furthermore, from the viewpoint of maintaining international competitiveness, it would be advisable, at the very least, for the monetary authorities to be vigilant of changes in real effective exchange rates.

This study has probably only scratched the surface, as far as research on Philippine exchange rate policy is concerned. A logical extension would be the formulation and estimation of an exchange rate or balance of payments model within which it may be possible to look into the interactions among

monetary, fiscal and exchange rate policies and to study the effects of external disturbances, such as those generated by exogenous currency changes, on domestic inflation and trade flows.

Footnotes

1. See Diaz-Alejandro (1974), Helleiner (1974), and Cline (1976) for an elaboration on the various issues involved.

2. It was not until November 1965, however, when the peso was formally devalued.

3. The terms of trade index (1973 = 100) declined continuously from 130.4 in 1974 to 78.1 in 1980.

4. For instance, no severe restrictions reminiscent of the 1950's and 1960's were instituted in the 1970's. And in 1980, the government initiated a tariff reduction program accompanied by the liberalization of the importation of previously banned categories of imports (Central Bank of the Philippines Annual Report, 1981; p. 53). While the availability of external financing certainly contributed to these developments, the regime of flexible exchange rates must be considered a complimentary element. As Baldwin (1975; p. 74) observes: "...foreign borrowings can initiate periods of prosperity but unless ... accompanied by exchange rate policies designed to maintain a vigorous export sector, these periods of economic activity are doomed to end suddenly as balance of payments problems eventually build up to a crisis."

5. See Central Bank of the Philippines Annual Reports for 1970, 1971 and 1972 for a more detailed explanation. In particular, see Central Bank Circular No. 289 dated February 21, 1970 and Central Bank Circular No. 340 dated April 7, 1972.

6. Central Bank of the Philippines, "Trade and Payments System of the Philippines," June 30, 1980 (mimeographed), p. 1.

7. See Central Bank of the Philippines Annual Reports, 1971-1980. The format of reporting is not similar for all years, e.g., in some years, the volume of commercial bank trading in foreign exchange is reported, while in other years, it is not. The trend is clear, however.

8. Foreign exchange receipts from Philippine exports and a number of invisible transactions, e.g., foreign exchange earnings of resident owners or operators of ocean-going vessels, U.S. dollar pension received by Philippine residents, and foreign exchange acquisition of resident insurance companies, are required to be surrendered to the Central Bank or its agent banks, and thus, not eligible for deposit. See Central Bank of the Philippines Circular No. 343 dated April 24, 1972.

9. Williamson (1965; p. 2) defines the "crawling peg" as a "system under which such par changes as occur are implemented slowly, in such a large number of small steps as to make the process of exchange rate adjustment continuous for all practical purposes: a system, therefore, under which the peg crawls from one level to another."

10. The average increase in the Philippine CPI during 1973-1981 was 14.2 per cent per year, as compared to a trade weighted average increase of 9.5 per cent per year in the CPI's of the U.S., Japan, Canada, France, Germany, Australia, the U.K. and Netherlands during the same period.

11. See Donges (1972) for a discussion of the Brazilian experience.

12. For a more detailed account of the control system, see Baldwin (1975).

13. The decontrol program was primarily directed at dismantling the very stringent and complicated controls introduced in the late 1950's. Baldwin (1975; p. 58) notes: "...exchange controls were removed, but liberalization in the sense of a significant easing of all controls over imports did not occur." Furthermore, restrictions remained on domestic citizens' dealings in foreign exchange and foreign securities. These explain the existence of differentials even during the decontrol period.

14. The standard deviation of monthly black market exchange rates about the mean during 1964-1972 is 18.5, as compared to 6.1 during 1973-1979.

15. This definition differs from that adopted in the NBER set of studies (Krueger, 1975) on the effects of liberalization in a number of LDC's. The "effective exchange rate" in the NBER studies is defined as the number of domestic currency units actually paid or received per unit of foreign currency, and is computed by adjusting the official parity (for a specific transaction or sector) for surcharges, tariffs, implicit interests foregone or guarantee deposits, and other charges on imports and subsidies on exports.

16. These are the appropriate weights to use in the small country case when the objective of policy is the stabilization of the domestic relative price of tradable goods (Black, 1976; Branson and Katseli, 1978). Other objectives which have been suggested are the minimization of fluctuations in the terms of trade and the current account (Branson and Katseli, 1980), the stabilization of the variance of the real effective exchange rate (Lipschitz and Sundararajan, 1980), and the stabilization of domestic real income (Turnovsky, 1980). Black suggests that the stabilization of the domestic relative price of tradable goods may be the appropriate objective for a small open LDC economy: "... less developed countries typically have little influence over their terms of trade, so that the main channel through which exchange rates affect the economy is the ratio of traded goods prices to non-traded goods prices" (p. 37).

The Philippines accounts for a major portion of world trade in coconut oil. However, a large share in trade in specific commodities does not necessarily imply export market power in view of substitution possibilities, among other things. In the case of coconut oil, the presence of closely competing substitutes, such as palm, soybean and cottonseed oils, and synthetic products, has prevented the Philippines from exercising any significant market power. Thus, the small country assumption holds for the Philippines.

17. This is not meant to say, however, that the exchange rate prevailing in 1973:I is necessarily the "equilibrium exchange rate." Krueger (1975) points out that while an equilibrium exchange rate can be precisely defined in theory, it is elusive in empirical work; hence, she defines the equilibrium rate as one not requiring quantitative restrictions or foreign borrowings to bolster or prevent reserve depletion. This is not "conceptually satisfactory... however, it suffices for empirical analysis in most instances" (pp. 62-63). Following this definition, a period characterized by a surplus in the balance of payments may be more suitable as a base than one registering zero balance or deficits in view of the existence of various exchange and trade restrictions. The implied assumption is that if these restrictions were removed, the external accounts would tend to balance, and reserves would remain unchanged at the same exchange rate. During 1973:I, a BOP surplus of U.S.$191 million was posted; foreign borrowings were relatively modest (U.S.$17 million). Except for 1973:II, BOP performance in the following quarterly periods were not as strong as that in 1973:I; foreign borrowings also increased substantially after 1973:II.

18. The wholesale price index is usually employed in empirical work involving the real exchange rate because it includes the prices of a great number of internationally traded goods. Following this reasoning, the ratio of foreign to domestic wholesale prices can be considered as a proxy for the relative price of traded goods. An alternative is to use a proxy for the relative price of traded to non-traded goods, using a weighted average of import and export prices for the former and the net value added deflator or an index of domestically produced-goods' prices for the latter.

19. In most instances, the final choice depended on the level of significance of the estimated coefficients.

References

Baldwin, R.E. Foreign Trade Regimes and Economic Development: The Philippines. New York: National Bureau of Economic Research, 1975.

Bautista, R.M. "The Balance of Payments Adjustment Process in the Philippines." Paper presented at the UNCTAD/UNDP Round Expert Group Meeting on the Balance of Payments Adjustment in Developing Countries, 1978.

_____. "Exchange Rate Flexibility and the Less Developed Countries: A Survey of Empirical Research and Policy Issues." Economic Analysis and Projections Department, The World Bank, 1979.

Black, S.W. Exchange Rate Policies for Less Developed Countries in a World of Floating Rates. Princeton Essays in International Finance No. 119, 1976.

Branson, W.H. and J.B. de Macedo. "The Optimal Weighing of Indicators for a Crawling Peg." National Bureau of Economic Research Working Paper No. 537, 1980.

Branson, W.H. and L.T. Katseli, "Exchange Rate Policy for Developing Countries." Yale University Economic Growth Center Discussion Paper No. 300, 1978.

_____. "Income Stability, the Terms of Trade and Choice of Exchange Rate Regime." Journal of Development Economics 7(1980): 49-69

_____. "Currency Baskets and Real Effective Exchange Rates" in M. Gersovitz et.al. (eds.), The Theory and Experience of Economic Development: Essays in Honor of Sir W. Arthur Lewis. George Allen and Unwin, 1982.

Cline, W.R. International Monetary Reform and the Developing Countries. Washington D.C.: Brookings Institution, 1976.

Cooper, R.N. "Sliding Parities: A Proposal for Presumptive Rules," in G.N. Halm (ed.). Approaches to Greater Flexibility of Exchange Rates. Princeton: Princeton University Press, 1970.

Crockett, A.D. and S.M. Nsouli. "Exchange Rate Policies for Developing Countries." Journal of Development Studies 13(1977): 125-143.

Diaz-Alejandro, C.F. Less Developed Countries and the Post-1971 International Financial System. Princeton Essays in International Finance No. 108, 1975.

Donges, J.B. Brazil's Trotting Peg: A New Approach to Greater Exchange Rate Flexibility in LDC's. Washington: American Enterprise Institute, 1971.

Haberler, G. Foreword to J.B. Donges. Brazil's Trotting Peg: A New Approach to Greater Exchange Rate Flexibility in LDC's. Washington: American Enterprise Institute, 1971.

_____. "Round Table on Exchange Rate Policy," in R.E. Baldwin and J.D. Richardson (eds.). International Trade and Finance. Boston: Little, Brown and Company, 1974.

Helleiner, G.K. "The Less Developed Countries and the International Monetary System." Journal of Development Studies 10(1974): 347-373.

Helliwell, J.F. "Policy Modeling of Foreign Exchange Rates." Journal of Policy Modeling 3(1979):425-444.

International Monetary Fund. International Monetary Reform: Documents of the Committee of Twenty. Washington, 1974.

Isard, P. Exchange Rate Determination: A Survey of Popular Views and Recent Models. Princeton Studies in International Finance No. 42, 1978.

Johnson, H. "The Case for Flexible Exchange Rates," in G.N. Halm (ed.) Approaches to Greater Flexibility of Exchange Rates. Princeton: Princeton University Press, 1970.

Katseli, L.T. The Reemergence of the Purchasing Power Parity Doctrine in the 1970's. Princeton Special Papers in International Economics No. 13, 1979.

Kenen, P.B. "Floats, Glides and Indicators: A Comparison of Methods for Changing Exchange Rates," in P.B. Kenen, Essays in International Economics. Princeton: Princeton University Press, 1980.

Krueger, A.O. Liberalization Attempts and Consequences. New York: National Bureau of Economic Research, 1975.

Lipschitz, L. and J. Sundararajan. "The Optimal Basket in a World of Generalized Floating." IMF Staff Papers 27(1980):80-100.

McKinnon, R.I. "Optimum Currency Areas." American Economic Review 53(1963): 717-725.

Rhomberg, R.R. "Indices of Effective Exchange Rates." IMF Staff Papers 23(1976)88-112.

Tower, E. and R.D. Willett. The Theory of Optimum Currency Areas and Exchange Rate Flexibility. Princeton Special Papers in International Economics No. 11, 1976.

Turnovsky, S.J. "A Determination of the Optimal Currency Basket: A Macroeconomic Analysis," Australian National University, 1980.

Underwood, T.G. "Analysis of Proposals for Using Objective Indicators as a Guide to Exchange Rate Changes." IMF Staff Papers 20(1973): 100-117.

Williamson, J. The Crawling Peg. Princeton Essays in International Finance No. 50, 1965.